Features

MAGAZINE SECTION

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Fiction

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"Tramp Fliers" and the Air Control

THE FIRST MEDICAL RESEARCH UNIT OF THE U. S. AIR SERVICE, SENT FOR OVERSEAS DUTY AT REQUEST OF GEN. PERSHING. COL. WILMER OF WASHINGTON IN CENTER OF FIRST ROW. LIEUT. HANSON AT EXTREME RIGHT.

Permanent Plans of the Air Service—Col. William H. Wilmer of Washington at Head of Overseas Laboratories—Discoveries in Medical Research During the War Now First Communicated to The Sunday Star's Special Correspondent.

The Boy Who Saw the Earth Slip to One Side — Some Great Men in the Air Service at Home and Abroad. Chances for the Flying Men in the Future—To Carry Mail and Passengers — Present Ideas on the Great Subject of the Hour.

Special Correspondence of The Star.

TOURS, France, February 21.

"WHAT is this carrying on of the air service?" I asked.

"It is the intention to establish permanent schools, I believe, similar to West Point," he answered. "Barron Field, at Fort Worth, is likely to be one, and, among others, Dayton. When you have men flying continuously in the service, you must keep in close touch with their physical condition. There's the mail carying; we see mail routes already marked out, with companies proposing to exploit them. We hear of coast patrols. As pilots are usually young men they will have to keep training new ones."

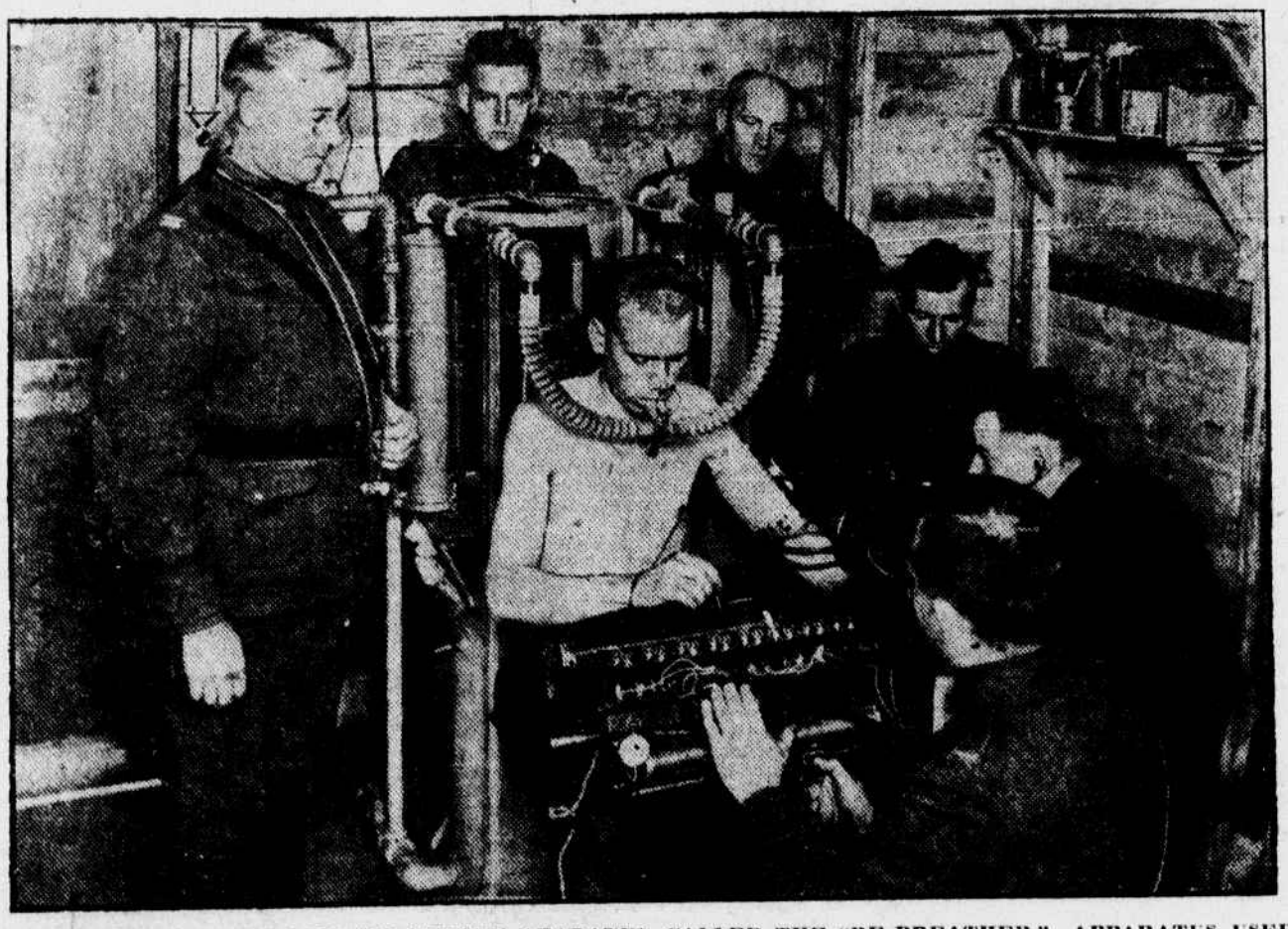
"Then it won't be a permanent profession?" I said.

"Yes, if they want to; at present, as a man gets older, he gets too much sense to go piloting, though some great aviators are in the forties—like Maj. Hitchcock, who was flight commander at Mineloa, the oldest flier in the service. Going up with him made you feel as safe as in a flat-bottomed rowboat on a peaceful pond. His son, Corp. Hitchcock of the Lafayette Squadrilla, was the youngest flier in the service. Nothing prevents a man making a life profession of it. The major was a typical outdoor man, with soft arteries and excellent reactions under our tests. The commanding officer at Barron Field, Col. Turner, must be nearly forty, and he showed physical condition better than most of the men between twenty and twenty-four who were tested."

* * *

So, here is the great thing that came out:

Piloting (with the lives of others in the pilot's hands) is not likely to be a go-as-you-please profession. I had caught a party who knows—both a flier and a research physiologist of the air service. For months I had seen Lieut. George Hanson of Schenectady, N. Y., going and coming between Tours, the front and the 2d AIC. He was introduced to me by his chief, a famous man, Col. William H. Wilmer of Washington, D. C., at the head of the overseas laboratories.



REGULATION TYPE OF LOW-AIR OXYGEN APARATUS, CALLED THE "RE-BREATHER." APPARATUS USED ON ALL SERVICE FLIERS AT FIRST EXAMINATION.

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"These are personal ideas," said the young physiologist. "The Farmans have already undertaken a cross-channel service under British governmental supervision. When the transatlantic

"Will they go high?" I asked. (It will appear why, shortly.)

"Probably, yes; because they can make better speed up there, and the air line starts, its pilots will surely be kept carefully under observation."

air is smoother; but it is not only an affair of high altitude, but of changing altitudes. Take bombing planes—they all used oxygen for their work; it was only planes going high for short periods that did not think it necessary to use oxygen, although they should have."

And there you are.

Here is a new story of the war—and of peace, even more.

In October, 1917, the problem of altitudes was recognized by the air service. Account must be taken of the peculiar strains which aviators undergo, and the particular effects of constantly going up and down, even in moderate altitudes.

They started this medical research board originally at the American University experiment station, Washington. In January, 1918, they moved to Mineola. All the problems as they came up proved to deal with the effects of altitudes. It was brought home by the British having investigated the causes of their air accidents; and although the figures may seem exaggerated, they said that 90 per cent of all their casualties were caused by some physical defect, temporary or permanent, in the aviators; that 8 per cent were caused by defective planes, and only 2 per cent by German bullets. This includes, of course, all training of beginners, the total casualties of the air service. So the American air service decided that it must find a way to keep closer track of the physical condition of its fliers. The results have been gratifying, and the figures are now first published. In the first year of the war the British lost in casualties 30 per cent of fliers in training and service; in 1916, 18 per cent, and in 1917, 12 per cent, while the American losses have been 2 per cent.

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"As medical standards become stricter you see the improvement," said the young physiologist of Col. Wilmer's notable bunch of specialists. "America benefited by British experience. Our fliers were given more careful tests of the eyes, nose and throat (breathing); but the main thing that came out was that aviators, after flying for a time, developed a staleness (as it was called), characterized by a sort of extreme fatigue. They would seem all played out. After a night's sleep they would awake feeling that they had not slept at all. They would be fed up with the whole thing. And while at first it was thought to be a kind of mental state they had gotten into, it was soon found that this fatigue was accompanied by definite changes in the heart and circulatory system.

* * *

"Then," he continued, "the problem of classifying pilots for specialized work was brought before this board—to pick men naturally fitted to fly at high, medium and low altitudes. The means was to find the man's natural adaptation to high altitudes, as when subjected to low atmospheric pressure, whence the available supply of oxygen is cut down. The body starts, then, to adapt itself to this condition, first, by an increase in the pulse rate, which causes more blood to flow through the lungs per minute, and also by increasing the depth of breathing, thus bringing more air in contact with the lungs; and, thirdly, after about twenty minutes of altitude a gradual concentration of the blood takes place, which means that there is more available haemoglobin per cubic volume to carry the oxygen.

"At first it was thought that by ascending many times the aviator would become adapted to rarefied air; but, on the contrary, careful experiment proved that the adaptation soon becomes fatigued and the result is staleness.

"Then, apart from classification, it becomes necessary to keep track of aviators in active flying, because their physical condition would change from week to week.

"In the states it was done by laboratories at the flying fields, equipped with flight surgeon and athletic trainer (type of Walter Camp, the famous coach, who brought many others in with him). They live in constant personal touch with the fliers, assisted by these medical research laboratories. Each carried four officers and six enlisted men and were equipped to make complete heart and eye examinations, plus the special tests for altitude effects; and when a man was found the least bit stale he was temporarily taken off flying. Often they would get two or three weeks' leave and be tested again on their return before being allowed to fly."

* * *

We saw it under way at Tours last September, where boys at the second A. I. C. and in town on leave acknowledged staleness, the advantage of the tests and the need to lay off and recuperate. It was common talk that the Canadians, then less strict (though now they are passing a drastic bill to keep tab on all fliers in peace times), had been losing men daily, I put it moderately. Numbers of men turned down by the American air service medicals were accepted by the Canadians, their physical standard being lower.

In Tours it was after July, 1918, when Gen. Pershing sent a special request for units with flight surgeons and these laboratories. Col. William H. Wilmer, the Washington opthalmologist (then in charge of the laboratories in the states) headed the first overseas unit. They established a

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